

B¹
automatically by a devices designed to work with the test strip to produce a value of analyte concentration in a sample applied to the test strip. A representative reading device for automatically practicing these steps, such that user need only apply sample to the reaction zone and then read the final analyte concentration result from the device, is further described in copending U.S. application serial no. 09/333,793, now U.S. Patent No. 6,193,873 B1, entitled "Sample Detection to Initiate Timing of an Electrochemical Assay," (Attorney Docket No. LFS-77), the disclosure of which is herein incorporated by reference.

IN THE CLAIMS

Claims 1, 6, 12, 16, 26 and 27 have been amended.

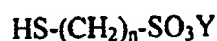
1. (Amended) An electrochemical test strip comprising:

B₂
(a) a reaction zone defined by opposing working and reference electrodes separated by a spacer layer, wherein at least one of said working and reference electrodes has a surface modified with a homogenous surface modification layer made up of self assembling molecules having a first sulfhydryl end group and a second sulfonate end group, wherein said sulfhydryl and sulfonate end groups are separated by a lower alkyl linker group; and

(b) a redox reagent system present in said reaction zone, wherein said redox reagent system comprises at least one enzyme and a mediator.

6. (Amended) An electrochemical test strip comprising:

B₃
(a) a reaction zone defined by opposing working and reference electrodes comprising a metal surface separated by a thin spacer layer, wherein at least one of said working and reference electrodes has a surface modified with a homogenous surface modification layer made up of self assembling molecules of the formula:



wherein:

n is an integer from 1 to 6; and

Y is H or a cation; and

B3
34

(b) a redox reagent system present in said reaction zone, wherein said redox reagent system comprises enzymes and a mediator.

12. (Amended) An electrochemical test strip for use in detecting the concentration of glucose in a physiological sample, said test strip comprising:

B4

(a) a reaction zone defined by opposing working and reference electrodes comprising a metal surface selected from the group consisting of gold and palladium separated by a thin spacer layer, wherein at least one of said working and reference electrodes has a surface modified with a homogenous surface modification layer made up of 2-mercaptoethane sulfonic acid or a salt thereof; and

(b) a redox reagent system present in said reaction zone, wherein said redox reagent system comprises a glucose oxidizing enzyme and a mediator.

16. (Amended) A method of determining the concentration of an analyte in a physiological sample, said method comprising:

(a) applying said physiological sample to an electrochemical test strip comprising:

B5

(i) a reaction zone defined by opposing working and reference metallic electrodes separated by a spacer layer, wherein at least one of said metallic working and reference electrodes has a surface modified with a homogenous surface modification layer made up of self assembling molecules having a first sulfhydryl end group and a second sulfonate end group, wherein said sulfhydryl and sulfonate end groups are separated by a lower alkyl linker group; and

(ii) a redox reagent system present in said reaction zone, wherein said redox reagent system comprises at least one enzyme and a mediator;

(b) detecting an electrical signal in said reaction zone using said metallic electrodes;
and

(c) measuring said detected electrical signal to thereby determine the concentration of said analyte in said sample.
